An Extract of a Letter from Mr. J. Flamſteed Aſtr.
Reg. *and* Reg. Soc. S. *giving his calculation of the
Eclipſes of* Jupiters *Satellites for the Year* 1687.
*Together with a Table of the Parallaxes of the
Orb,* and *the Ephemeris of* Jupiters Geocentric
Place for the ſame Year ; *to which is added an
Obſervation of the Eclipſe of the* Moon, *Novemb.*
30, 1695. *made at* Liſbon, *and Mr.* Flamſteed's
own Obſervation of the Eclipſe of Jupiter *by the
Moon on March* 31*th. paſt.*

I Give you here a Catalogue of all the Eclipſes of ♃ s Sa-
tellites, for the enſuing year 1687. and together with it
2 Tables, one of his Geocentrick places, the other of the Pa-
rallaxes of his Orbit to every day in the ſaid Year. This is
the 4*th.* Catalogue I have got publiſhed in the Tranſactions.
With the 1*ſt.* printed *Dec.* 1683. *Num.* 154. I ſhewed their
uſes, and how by their help the difference of Longitude,
betwixt any two places on the Earth, where they ſhould be
obſerved, might be determined. And I Taught a Method
of finding out within what ſpace on our Globe any of them
would be obſervable : This was done in Engliſh for the uſe
of our Country-men. Next Year in *December* 1684. I re-
peated thoſe Directions in Latin *Num.* 165. *pag.* 760. for the
benefit of Forreigners. In the two Tranſactions of *Decem.*
85. *Num.* 177 and 178, with the Catalogue of Eclipſes I
deſcribed a ſmall Inſtrument, and ſhewed by the help of it,
the ſaid Catalogue, and the Tables of ♃ Geocentrick places
and Parallexes, the appearances of the Satellites at any time
within the compaſs of that Year might be diſcovered and de-
lineated ; if therefore the Reader deſire to be informed con-
cerning the uſe of the Catalogue and Tables herewith print-
ed,

ed, he may repair to the above-mentioned Tranfactions.
I fhall only add.

That whereas for the two Years laft paft, the *4th.* Satell-
lit has not heen Eclipfed. As this Year enters, it begins to
fall into ♃ s fhadow, and that its Eclipfe will again be ob-
fervable for the 4 next Years. The firft that happens *Feb.*
2. in the Morning will be well worth the attention of the
Curious; in that its duration is the fhorteft of any that fol-
low it this Year; both the Ingreffe and Emerfion are Vifible
with us, as are all thofe in the Catalogue which are alike
marked with an Afterick (∗) which if they fhall be exact-
ly obferued, may ferue to determine the place of the Node
of the orbit of ♃ s Satellits, and its Inclination to the orbit
of ♃, by comparing the obferuation either with fuch as
wee haue already obtained, or as may be made hereafter.

   In my laft obferuations, the Eclipfes of the *2d* and *3d* Satell-
lit have anticipated my Calculations fomething more than
I expected in fo fhort a time; of which I thought it conue-
nient to acquaint the Reader, that hee may attend them one
quarter of an hour earlyer than the times noted in the
Catalogue. In 2 or 3 Years more we may expect opportu-
nitys of obferuations, which will afford us fuch a correction
for the error, that the Numbers fhall fail no more in them,
than in the *1ft.* whofe Eclipfes have not yet differed aboue
3 minutes from the Calculation.

   I giue you further herewith an obferuation of the Lunar
Eclipfe *Nouember* 30, 1685. made at *Lifbon* by my kind
Friend Mr. *Henry Iacobs:* and another of my own of the
Occultation of ♃ by the Moon, *March* the *31th.* this Year
1686: of which you haue publifhed feueral forreign ob-
feruations already.

Tab-

Tabula Parallaxium *Jovis*

D	Janua. A		Febru. A		Martii. A		April. A		Maii. A		Junii. S		D
	G.	M.	G.	M.	G.	M.	G.	M.	G.	M.	G.	M.	
1	6	30	9	36	10	49	9	41	5	43	0	16	1
2	6	38	9	41	10	49	9	36	5	38	0	29	2
3	6	44	9	45	10	50	9	31	5	27	0	41	3
4	6	52	9	49	10	50	9	25	5	17	0	54	4
5	6	59	9	53	10	50	9	19	5	06	1	06	5
6	7	06	9	57	10	49	9	13	4	55	1	19	6
7	7	13	10	01	10	49	9	07	4	44	1	31	7
8	7	20	10	04	10	48	9	01	4	33	1	44	8
9	7	26	10	08	10	48	8	55	4	22	1	56	9
10	7	33	10	11	10	47	8	48	4	11	2	08	10
11	7	40	10	14	10	46	8	41	3	59	2	21	11
12	7	46	10	18	10	44	8	34	3	48	2	33	12
13	7	53	10	21	10	42	8	27	3	36	2	45	13
14	7	59	10	24	10	41	8	19	3	24	2	57	14
15	8	06	10	26	10	40	8	12	3	12	3	09	15
16	8	11	10	29	10	38	8	04	3	00	3	21	16
17	8	17	10	31	10	36	7	56	2	48	3	33	17
18	8	23	10	34	10	33	7	48	2	37	3	44	18
19	8	29	10	36	10	31	7	40	2	25	3	56	19
20	8	35	10	38	10	28	7	32	2	12	4	08	20
21	8	41	10	40	10	25	7	23	2	00	4	19	21
22	8	46	10	41	10	22	7	14	1	48	4	30	22
23	8	52	10	43	10	19	7	05	1	35	4	42	23
24	8	57	10	44	10	15	6	56	1	23	4	53	24
25	9	02	10	45	10	12	6	47	1	11	5	04	25
26	9	08	10	46	10	08	6	37	0	58	5	15	26
27	9	13	10	47	10	04	6	28	0	45	5	25	27
28	9	17	10	48	10	00	6	18	0	33	5	36	28
29	9	22			9	55	6	08	0	21	5	46	29
30	9	27			9	51	5	58	⊙ A	08	5	57	30
31	9	31			9	46			0 S	04			31

ad diem quemlibet Anni 1687.

D	Iulii. S		Augu. S		Sept. S		Octob. S		Novem. S		Dec. S		D
	G.	M.	G.	M.	G.	M.	G.	M.	G.	M.	G.	M.	
1	6	07	10	02	11	02	9	37	6	24	2	18	1
2	6	17	10	06	11	02	9	33	6	17	2	09	2
3	6	27	10	11	11	01	9	28	6	09	2	00	3
4	6	37	10	15	11	00	9	23	6	02	1	52	4
5	6	47	10	19	10	59	9	18	5	54	1	42	5
6	6	56	1C	23	10	57	9	12	5	46	1	34	6
7	7	05	1C	27	10	56	9	07	5	38	1	25	7
8	7	14	10	31	10	54	9	01	5	31	1	16	8
9	7	23	10	34	10	52	8	56	5	23	1	07	9
10	7	32	10	37	10	50	8	50	5	15	0	58	10
11	7	41	10	40	10	48	8	45	5	07	0	50	11
12	7	49	10	43	10	46	8	39	4	59	0	41	12
13	7	57	10	46	10	43	8	33	4	51	0	32	13
14	8	05	10	48	10	41	8	27	4	42	0	23	14
15	8	14	10	50	10	38	8	21	4	34	0	14	15
16	8	21	10	52	10	35	8	15	4	26	0	05	16
17	8	29	10	54	10	32	8	08	4	18	0 A	04	17
18	8	36	10	56	10	29	8	02	4	09	0	13	18
19	8	44	10	57	10	26	7	55	4	01	0	22	19
20	8	51	10	59	10	23	7	49	3	53	0	31	20
21	8	58	11	00	10	19	7	42	3	44	0	40	21
22	9	05	11	01	10	15	7	36	3	36	0	48	22
23	9	11	11	02	10	11	7	29	3	27	0	50	23
24	9	28	11	03	10	08	7	22	3	19	1	00	24
25	9	24	11	03	10	04	7	15	3	10	1	15	25
26	9	30	11	04	10	00	7	08	3	00	1	24	26
27	9	35	11	04	9	56	7	01	2	53	1	33	27
28	9	4	11	0	9	51	6	54	2	44	1	40	28
29	9	46	11	0	9	47	6	46	2	35	1	51	29
30	9	5	11	04	9	42	6	39	2	27	1	59	30
31	9	57	11	03			6	32			2	08	31

Januarii.

D.	H.	M.			
1	01	27	1		i
2	09	34	2		i
	19	55	1	*	i
3	07	23	3		i
4	14	22	1		i
5	22	50	2		i
6	08	50	1		i
8	03	17	1		i
9	12	06	2		i
	21	45	1		i
10	11	18	3		i
11	16	13	1		i
13	01	23	2		i
	10	41	1		i
15	05	09	1		i
	23	53	4	pen	
16	14	39	2		i
	23	37	1		i
17	15	15	3		i
	18	14	3	*	e
18	18	05	1	*	i
20	03	56			i
22	07	01	1		i
23	17	12	2	*	i
24	01	29	1		i
	19	12	3	*	i
	22	11	3		e
25	19	57	1		i
27	06	29	2		i
	14	25	1		i
29	08	54	1		i
30	19	47	2		i
31	03	22	1		i
	23	10	3		i

Februarii.

D.	H.	M.			
1	02	10	3		e
	17	20		*	i
	18	20	4	*	e
	21	51	1		i
3	09	04	2		i
	16	19	1	*	i
5	10	47	1		i
6	22	21	2		i
7	05	16	1		i
8	03	08	3		i
	6	08	3		e
	23	44	1		i
10	11	39	2		i
	18	13	1	*	i
12	12	41	1		i
14	00	56	2		i
	7	10	1		i
15	7	06	3		i
	10	07	3		e
16	01	38	1		i
17	14	14	2		i
	20	07	1		i
18	11	11			i
	12	32	4		e
19	14	35	1		i
21	03	32	2		i
	9	04	1		i
22	11	05	3		i
	14	06	3		e
23	03	33	1		i
24	16	50	2	*	i
	22	01	1		i
26	16	30	1	*	i
28	06	07	2		i
	10	59	1		i

Martii.

D.	H.	M.			
1	15	04		*	i
	18	06	3	*	e
2	05	27	1		i
3	19	25	2		i
	23	56	1		i
5	18	26	1	*	i
7	05	05			i
	6	43	4		e
	8	44	2		i
	12	54	1		i
8	19	02			i
	22	06	3		e
9	07	22	1		i
10	22	02	2		i
11	01	52	1		i
12	20	20	1		i
14	11	40	2		i
	14	49	1	*	i
15	23	03			i
6	02	06	3		e
	9	18	1		i
18	00	39	2		i
	3	47	1		i
19	22	16	1		i
21	13	57	2	*	i
	16	44	1	*	i
23	03	03			i
	6	07	3		e
	11	13	1		i
	23	02			i
24	0	54	4		e
25	3	15	2		i
	5	42	1		i
27	00	11	1		i
28	16	34	2	*	i
	18	39	1		i
30	07	02			i
	10	08	3		e
	13	09	1	*	i

Aprilis.

D.	H.	M.		
1	05	52	2	i
	7	37	1	i
3	02	06	1	i
4	19	10	2	i
	20	35	1	i
6	11	02		
	14	08	3	* e
	15	04	1	* i
8	08	28	2	i
	9	33	1	i
9	17	00	4	* i
	19	04	4	e
10	04	01	1	i
11	21	46	2	i
	22	30	1	i
13	15	02	3	* i
	16	59	1	i
	18	08	3	e
15	11	04	2	i
	11	27	1	i
17	05	56	1	i
19	00	22	2	i
	0	25	1	i
20	18	54	1	i
	19	01	3	i
22	13	23	1	* i
	13	40	2	* i
24	07	50	1	i
26	02	19	1	i
	2	57	2	i
	10	56	4	* i
	13	12	4	* e
27	20	47	1	i
	23	00	3	i
29	15	14	2	*
	15	16	1	* i

Maii.

D.	H.	M.		
1	09	44	1	i
3	04	13	1	i
	5	33	2	i
4	22	41	1	i
5	02	58	3	i
6	17	10	1	i
	18	50	2	i
8	11	38	1	* i
10	6	06	1	i
	7	07	2	i
12	00	35	1	i
	6	56	3	i
13	4	53	4	i
	6	17	4	e
	19	03	1	i
	21	24	2	i
15	13	31	1	* i
17	08	00	1	i
	10	42	2	* i
19	02	28	1	i
	10	54	3	* i
20	20	56	1	i
	23	59	2	i
22	15	24	1	* i
24	09	53	1	* i
	13	16	2	* i
26	04	21	1	i
	14	51	3	* i
27	22	49	1	i
28	02	33	2	i
29	17	17	1	i
8 ☉	22	46	4	i
30	01	24	4	e
31	14	02	1	* e
	18	36	2	e

Junii.

D.	H.	M.		
2	08	30	1	e
	21	59	3	e
4	02	58	1	e
	7	54	2	e
5	21	27	1	e
7	15	55	1	e
	21	12	2	e
9	10	23	1	* e
10	01	57	1	e
11	04	51	3	e
	10	29	2	* e
12	23	20	1	e
14	17	48	1	e
	23	45	2	e
15	16	41	4	i
	19	57	4	e
16	12	16	1	* e
17	05	55	3	e
18	06	44	1	e
	13	03	2	* e
20	01	13	1	e
21	19	41	1	e
22	02	21	2	e
23	14	10	1	* e
24	09	54	3	* e
25	08	38	1	* e
	15	38	2	e
27	03	07	1	e
28	21	34	1	e
29	04	55	2	e
30	36	03	1	e

Julii.

D.	H.	M.		
1	13	53	3	e
2	10	32	1	e
	10	38	4	* i
	13	32	4	e
	18	13	2	e
4	05	00	1	e
5	23	29	1	e
6	07	32	2	e
7	17	57	1	e
8	17	52	3	e
9	12	26	1	* e
	20	59	2	e
11	06	55	1	e
13	01	23	1	e
	10	07	2	* e
14	19	52	1	e
15	18	38	3	i
	21	52	3	e
16	14	21	1	e
	23	25	2	e
18	08	50	1	e
19	04	38	4	i
	7	40	4	e
20	03	19	1	e
	12	43	2	e
21	21	47	1	e
22	22	38	3	i
23	01	53	3	e
	16	16	1	e
24	02	02	2	e
25	10	45	1	* e
27	05	14	1	e
	15	21	2	e
28	23	43	1	e
30	02	39	3	i
	05	54	3	e
	18	12	1	e
31	04	39	2	e

Augusti.

D.	H.	M.		
1	12	42	1	e
3	07	11	1	e
	17	58	2	e
4	22	40	4	i
5	1	40	1	e
	1	52	4	e
6	06	40	3	i
	9	56	3	* e
	20	09	1	e
7	07	17	2	e
8	14	38	1	e
10	09	07	1	* e
	20	37	2	e
12	03	37	1	e
13	10	42	3	i
	13	58	3	e
	22	06	1	e
14	09	56	2	* e
15	16	35	1	e
17	11	05	1	e
	23	15	2	e
19	05	34	1	e
20	41	44	3	i
	18	01	3	e
21	00	03	1	e
	12	35	2	e
	16	47	4	i
	20	05	4	e
22	18	33	1	e
24	13	02	1	e
25	01	54	2	e
26	07	32	1	* e
27	18	46	3	i
	22	03	3	e
28	02	01	1	e
	15	14	2	e
29	20	30	1	e
31	15	00	1	e

Septemb.

D.	H.	M.		
1	04	33	2	e
2	09	29	1	* e
3	22	48	3	i
4	02	07	3	e
	3	59	1	e
	17	53	2	e
5	22	28	1	e
7	10	55	4	i
	14	21	4	e
	16	58	1	e
8	07	13	2	* e
9	11	27	1	e
11	02	51	3	i
	5	57	1	e
	6	10	3	* e
	20	32	2	e
13	00	26	1	e
14	18	56	1	e
15	09	52	2	e
16	13	25	1	e
18	06	54	3	* i
	7	54	1	* e
	10	13	3	e
	23	12	2	e
20	02	24	1	e
21	20	54	1	e
22	12	31	2	e
23	15	23	1	e
24	05	03	4	i
	8	37	4	e
25	09	52	1	e
	10	56	3	i
	14	16	3	e
26	01	51	2	e
27	04	22	1	e
28	22	51	1	e
29	15	10	2	e
30	17	20	1	e

Octobris.					Novembr.					Decembre.		
D.	H.	M.			D.	H.	M.			D.	H.	M.
2	11	49	1	e	1	14	01	1	e			
	14	58	3	i	3	08	26	1	e			
	18	18	3	e	4	04	15	2 *	e			
3	04	29	2	e	5	02	58	1	e			
4	06	19	1 *	e	6	21	26	1	e			
6	00	48	1	e	7	14	21	3	e			
	17	48	2	e		17	32	2	e			
7	19	17	1	e	8	15	54	1	e			
9	13	46	1	e	10	10	23	1	e			
	18	59	3	i	11	06	50	2	e			
	22	20	3	e	12	04	51	1	e			
10	07	07	2 *	e	13	11	15	4	i			
	23	11	4	i		15	04	4	e			
11	02	49	4	e		23	19	1	e			
	8	15	1	e	14	20	07	2	e			
13	02	44	1	e		18	20	3	e			
	20	26	2	e	15	17	47	1	e			
14	21	13	1	e	17	12	15	1	c			
16	15	42	1	e	18	09	24	2	e			
	23	00	3	i	19	06	43	1	e			
17	02	22	3	e	21	01	12	1	e	*Toto Decembre*		
	9	45	2	e		22	17	3	e	Jupiter *latet*		
18	10	11	1	e		22	40	2	e	*ſub Radiis*		
20	04	40	1 *	e	22	19	39	1	e	*Solis.*		
	23	03	2	e	24	14	07	1	e			
21	23	09	1	e	25	11	57	2	e			
23	17	37	1	e	26	08	35	1	e			
24	06	23	3	e	28	03	03	1	e			
	12	21	2	e	29	01	13	2	e			
25	12	06	1	e		2	14	3	e			
27	06	35	1	e		21	30	1	e			
	17	13	4	i	30	05	04	4	i			
	20	59	4	e		9	00	4	e			
28	01	39	2	e								
29	01	03	1	e								
30	19	32	1	e								
31	10	22	3	e								
	14	57	2	e								

	Janu.		Febru.		March.		April.		May.		June.		
	♃		♃		♃		♃		♃		♃		
	G.	M.	G.	M.	G.	M.	G.	M.	G.	M.	G.	M.	
1	13	46	19	19	22	46	24 ℞	07	22	39	19	05	1
2	13	58	19	29	22	51	24	07	22	34	18	57	2
3	14	10	19	38	22	57	24	07	22	28	18	49	3
4	14	22	19	47	23	02	24	06	22	22	18	42	4
5	14	34	19	55	23	06	24	05	22	16	18	34	5
6	14	45	20	04	23	11	24	04	22	10	18	27	6
7	14	57	20	12	23	15	24	03	22	04	18	19	7
8	15	09	20	21	23	20	24	01	21	58	18	11	8
9	15	20	20	29	23	24	23	59	21	52	18	04	9
10	15	32	20	38	23	27	23	58	21	45	17	56	10
11	15	43	20	46	23	31	23	56	21	39	17	48	11
12	15	54	20	54	23	35	23	54	21	32	17	41	12
13	16	06	21	01	23	38	23	51	21	25	17	34	13
14	16	16	21	09	23	41	23	49	21	18	17	27	14
15	16	27	21	17	23	44	23	46	21	11	17	20	15
16	16	38	21	24	23	47	23	43	21	04	17	13	16
17	16	49	21	3	23	50	23	40	20	57	17	06	17
18	17	00	21	38	23	52	23	37	20	50	16	59	18
19	17	10	21	45	23	55	23	33	20	43	16	52	19
20	17	21	21	52	23	57	23	30	20	35	16	46	20
21	17	32	21	59	23	59	23	26	20	28	16	39	21
22	17	42	22	05	24	00	23	22	20	20	16	33	22
23	17	52	22	12	24	02	23	18	20	14	16	26	23
24	18	02	22	18	24	03	23	14	20	06	16	20	24
25	18	12	22	24	24	04	23	09	19	58	16	14	25
26	18	23	22	30	24	05	23	04	19	50	16	08	26
27	18	33	22	35	24	06	23	00	19	43	16	02	27
28	18	42	22	41	24	07	22	56	19	35	15	56	28
29	18	51			24	07	22	50	19	28	15	51	29
30	19	00			24	08	22	45	19	20	15	44	30
31	19	10			24	08			19	12			31

D	Julii ♐ G	M	August ♐ G	M	Septem ♐ G	M	Octob ♐ G	M	Novem ♐ G	M	Dece ♑ G	M	D
1	15	40	14	D 17	15	47	19	40	25	27	2	02	1
2	15	34	14	17	15	53	19	50	25	39	2	16	2
3	15	29	14	17	15	59	19	59	25	51	2	29	3
4	15	24	14	17	16	05	20	10	26	04	2	43	4
5	15	20	14	18	16	11	20	20	26	17	2	57	5
6	15	15	14	19	16	17	20	30	26	29	3	11	6
7	15	11	14	21	16	24	20	40	26	42	3	25	7
8	15	07	14	22	16	30	20	51	26	55	3	38	8
9	15	03	14	23	16	37	21	01	27	08	3	52	9
10	14	59	14	25	16	44	21	12	27	21	4	06	10
11	14	55	14	27	16	50	21	23	27	34	4	20	11
12	14	51	14	29	16	58	21	34	27	47	4	34	12
13	14	48	14	31	17	07	21	44	28	00	4	48	13
14	14	45	14	34	17	14	22	55	28	13	5	02	14
15	14	42	14	36	17	21	22	06	28	26	5	16	15
16	14	39	14	39	17	28	22	17	28	39	5	29	16
17	14	36	14	42	17	36	22	28	28	53	5	42	17
18	14	33	14	45	17	44	22	40	29	06	5	57	18
19	14	31	14	49	17	53	22	52	29	19	6	11	19
20	14	28	14	52	18	01	23	03	29	33	6	25	20
21	14	26	14	56	18	09	23	14	29	46	6	39	21
22	14	25	15	00	18	18	23	26	29	59	6	53	22
23	14	23	15	04	18	27	23	37	0 ♑	13	7	07	23
24	14	21	15	08	18	35	23	49	0	26	7	21	24
25	14	20	15	12	18	44	24	01	0	40	7	35	25
26	14	19	15	17	18	53	24	13	0	53	7	48	26
27	14	18	15	21	19	02	24	25	1	07	8	02	27
28	14	17	15	26	19	12	24	37	1	21	8	18	28
29	14	17	15	31	19	21	24	50	1	34	8	30	29
30	14	17	15	37	19	31	25	02	1	48	8	44	30
31	14	17	15	42			25	14			8	58	31

Defectus Lunaris Uliſſipponæ a Do. Jacobeo *Obſer-vatus Nov.* 30. 1686.

	H. M.
Initium	8 02
Immerſio	9 06
Emerſio	10 50
Finis	11 57

Jovis a Luna tecti Obſervationes Grenovici habitæ a Jo. Flamſteedio *Math. Reg. Martii* 31. 1686.

Martii 31 ☿	Temp. corr per hor. oſcil H. M. S.	
	9. 32. 30	♃ s limbus tangebat limbum Lunæ lucidum, Mareotidis diametrum a termino ejus boreo.
	33. 42	♃ Totus tectus erat. Quantum per vapores horizontis & undulationem limbi valde turbidam, licuit conjicere.
	10. 11. 12	Differentia declinationem limbi Lunæ vere Auſtrini & loci Ingreſſus, Tubo ped. ♃ & Micrometro 1546 = 12 m. 42 ſec.
	30. 30	Jovis particula emerſerat, e regione realis limbi Mæotidis.
	31. 36	Jupiter totus liber.
	35. 50	Differentia declinationum centri Jovis, & limbi Lunæ Auſtrini 3436=28m. 5 ſ.
	41. 40	Repet. 3585=29m.28 ſ.
	44. 00	Lunæ Diameter 3906=32m.07 ſ.
	45. 44	Repet. 3915=32m.11 ſ.